

Claims

[1] An MRI apparatus comprising:

5 a pair of static magnetic field generating units being placed facing each other, and for forming a static magnetic field region in the space therebetween;

a tabular gradient magnetic field generating unit being placed on the facing surface of the respective static magnetic field generating units, each via the first support member; and

10 the static magnetic field correcting units being each arranged between the static magnetic field generating unit and the gradient magnetic field generating unit, for correcting the static magnetic field uniformity,

wherein the static magnetic field correcting unit is a
15 tabular shim tray on which a magnetic piece for correcting the static magnetic field uniformity is placed, and being placed respectively via the second support member on the facing surface of a pair of static magnetic field generating units.

[2] The MRI apparatus according to claim 1, wherein the shim
20 tray and the gradient magnetic field generating unit are independently supported by the static magnetic field generating unit.

[3] The MRI apparatus according to claim 1, wherein the air gap is set between the shim tray and the gradient magnetic field

generating unit, and the shim tray and the gradient magnetic field generating unit.

[4] The MRI apparatus according to claim 1, wherein the shim tray includes one or more through-holes, and the first support
5 member is placed in the through-hole.

[5] The MRI apparatus according to claim 1, wherein the shim tray is provided with a plurality of through-holes with predetermined pattern, in which one or more holes of the plurality of through-holes have the magnetic piece inserted,
10 and other one or more through-holes have the first support member inserted.

[6] The MRI apparatus according to claim 1, wherein the first support member is placed in centrosymmetric position corresponding the gradient magnetic field generating unit.

15 [7] The MRI apparatus according to claim 1, wherein the shim tray is formed by a non-magnetic material.

[8] The MRI apparatus according to claim 7, wherein the shim tray is formed by a material which is electrically conductive.

[9] The MRI apparatus according to claim 1, wherein the static
20 magnetic field generating unit has a concave portion on the facing surface, and the shim tray and the gradient magnetic field generating unit are placed in the concave portion.

[10] The MRI apparatus according to claim 9, wherein a member for restraining the vibration in the principal-plane direction

of the gradient magnetic field generating unit is placed between the inner surface of the concave portion and the gradient magnetic field generating unit.

[11] The MRI apparatus according to claim 1, wherein the first
5 support member includes a vibration-damping member.

[12] The MRI apparatus according to claim 1 to 4, wherein the first support member includes a magnetic member, for correcting the uniformity of the static magnetic field.

[13] The MRI apparatus according to claim 1, wherein the first
10 support member and the shim tray do not touch each other.

[14] The MRI apparatus according to claim 5, wherein a plurality of through-holes of the shim tray have two kinds of diameters that are large and small, in which the magnetic piece is inserted in the through-hole with a small diameter and the first support
15 member is inserted in the through-hole with a large diameter.

[15] The MRI apparatus according to claim 5, wherein a member for suppressing the vibration amplitude of the gradient magnetic field generating unit is inserted in one or more through-holes out of the plurality of the through-holes of the
20 shim tray which have neither the magnetic piece nor the first support member is placed, and the amplitude-suppressing member is an elastic member of which one end is fixed to the static magnetic field generating unit and the other end contacts the gradient magnetic field generating unit.

[16] The MRI apparatus according to claim 15, wherein the amplitude-suppressing member is placed at a loop of the vibrations in the gradient magnetic field generating unit.

[17] The MRI apparatus according to claim 5, wherein a
5 vibration-damping material is filled in one or more through-holes out of the plurality of through-holes of the shim tray in which neither the magnetic piece nor the support member is placed.

[18] The MRI apparatus according to the claims, wherein the
10 first support member comprises the first holding part and the second holding part placed with the vibration-damping member therebetween, and that the first holding part is fixed to the static magnetic field generating unit and the second holding part is fixed to the gradient magnetic field generating unit.

[19] The MRI apparatus according to claim 18, wherein the first
15 holding part has a container-shaped portion and the vibration-damping member is placed in the container-shaped portion, and the second holding part is inserted in the vibration-damping member being placed in the container-shaped
20 portion.

[20] The MRI apparatus according to claim 1, wherein the magnetic piece is formed with a material that is the vibration-damping member being combined with a magnetic substance.

[21] The MRI apparatus including:

a pair of static magnetic field generating units being placed facing each other, for forming a static magnetic field region in the spacing in between;

5 a gradient magnetic field generating unit being respectively arranged in the facing surface of a pair of static magnetic field generating units; and

a shim tray being placed between the static magnetic field generating unit and the gradient magnetic field generating unit,
10 for correcting the uniformity of the static magnetic field,

wherein the shim tray has plural layers of structure and at least one layer is formed by a vibration-damping material, and the gradient magnetic field generating unit is mounted on the surface of the shim tray and supported by the shim tray.

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